History's Marks

A year before US President Eisenhower made his dramatic "Atoms for Peace" proposal to the UN General Assembly in December 1953, two separate events framed where the world was heading.

❶ In November 1952, the United States exploded a 10.4 megaton hydrogen bomb at a test site on Enewatak, west of Bikini. The thermonuclear weapon destroyed one island and left a crater 175 feet deep. It was hundreds of times more powerful than the atomic bomb used during World War II and foreshadowed a multi-nation nuclear arms race.

❷ In December 1952, the Nobel Foundation awarded its prestigious Nobel Prize in Physics. The award went to Dr. Felix Bloch, a Swiss-born scientist, and Dr. Edward Purcell of the USA for their pioneering work in understanding forces deriving from the atomic nucleus, specifically nuclear magnetism. The work would lead to what first came to be called nuclear magnetic resonance imaging, later shortened to simply MRI, dropping the "nuclear" tag. "We are dealing not only with a new tool, but with a new subject," Dr. Purcell said in his 1952 Nobel lecture.

More than a half century later, where is the world headed? Nuclear weapons of mass destruction are many times more powerful and abundant than they were in November 1952. Nuclear-based medical imaging is many times more powerful and useful in helping doctors diagnose and cure sickness.

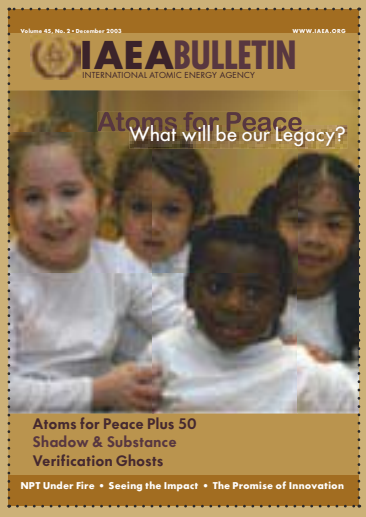
Now as then, the dual challenge looms. Nuclear science and technology remains a tapestry that many people see as crafted from one dark cloth. Horrific visions of mushroom clouds, nuclear meltdowns and "dirty bombs" colour "nuclear" applications, no matter whether they are distinct and different scientific and political threads.

The way ahead may be to revisit lessons of the past. After the bomb, Albert Einstein urged people to change their way of thinking. Atomic energy did not create a new problem, he said, but "merely made more urgent the necessity of solving an existing one." The big problems we face, he said, "cannot be solved at the same level of thinking we were at when we created them."

The roster of distinguished contributors to this edition of the *IAEA Bulletin* take a hard look at nuclear's past and future, and at the changing role of the IAEA, the "Atoms for Peace" agency. Their views are their own, and they urge us all to think anew about the atomic legacy we are shaping.

About five years after President Eisenhower addressed the UN General Assembly, he started the process of trying to negotiate a treaty to ban the testing of nuclear weapons, an idea voiced by India and others as early as 1954. That didn't materialize. Instead, an intensified nuclear arms race ensued. Nearly forty years later, States finally adopted a nuclear Comprehensive Test Ban Treaty. It has yet to enter into force.

—Lothar Wedekind, Editor-in-Chief



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